

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A medical device for controlled drug delivery in cardiac care in a patient comprising:

an implantable drug delivery module which comprises

a plurality of reservoirs,

a release system contained in each of the reservoirs, wherein the release system comprises at least one drug,

a plurality of discrete reservoir caps separating the release system from an environment outside of the reservoirs, and

a means for disintegrating one or more of the reservoir caps by electrothermal ablation to release the drug from one or more of the reservoirs;

one or more electrodes or sensors for operable engagement with a cardiac tissue of a patient, wherein the one or more electrodes or sensors are useful for cardiac monitoring, cardiac stimulation, or both; and

at least one microcontroller for controlling operational interaction of the drug delivery module and the cardiac electrode or sensor.

2. (Original) The device of claim 1, wherein the one or more electrodes comprise ECG monitoring electrodes.

3. (Original) The device of claim 1, wherein the one or more electrodes comprise cardioversion electrodes.

4. (Original) The device of claim 1, wherein the one or more electrodes comprise cardiac pacing electrodes.

5-6. (Cancelled).

7. (Currently Amended) The device of claim 6, wherein the microcontroller is adapted to initiate release of the drug from the drug delivery module immediately upon receiving a signal from the one or more electrodes, which signal is indicative of onset of an arrhythmia.

8. (Previously Presented) The device of claim 7, which is adapted to detect non-sustained ventricular tachycardias, changes in heart rate variability, or both.

9. (Original) The device of claim 1, further comprising a defibrillator for delivering a cardioversion shock.

10. (Original) The device of claim 9, which is useful in the treatment of atrial fibrillation, wherein the drug comprises an anti-coagulant, an analgesic, or both.

11. (Previously Presented) The device of claim 10, wherein the microcontroller, upon receiving a signal from the one or more electrodes or sensors indicative of an atrial fibrillation, is adapted to release the drug and then after a predetermined delay to initiate the cardioversion shock, wherein the delay is of a duration effective to permit the drug to take effect.

12. (Previously Presented) The device of claim 11, the device is adapted to reconfirm the arrhythmia following the predetermined delay and, if detected, to deliver the cardioversion shock.

13. (Previously Presented) The device of claim 1, which is adapted for the treatment of ventricular arrhythmias.

14. (Original) The device of claim 1, further comprising a pacemaker having electrodes for contacting the cardiac muscle for monitoring of a patient and transmission of pacing signals.

15. (Original) The device of claim 14, wherein the drug comprises an anti-arrhythmic drug, which, upon release, is effective to reduce the frequency of induced pacing activity.

16. (Previously Presented) The device of claim 14, wherein the drug is one which, upon release, is effective to increase the sensitivity of myocardial tissue to the pacemaker stimulation pulse to effectively reduce pacing thresholds.
17. (Previously Presented) The device of claim 1, comprising a cardioversion means which comprises a signal generator connected to at least two of said electrodes, wherein the microcontroller controls the signal generator and the means for disintegrating one or more of the reservoir caps.
18. (Original) The device of claim 17, wherein the cardioversion means is implantable.
19. (Original) The device of claim 1, comprising an ECG monitor for monitoring for a change in heart rate variability.
20. (Previously Presented) The device of claim 19, for use in a patient having a transplanted heart, wherein the drug is one which, upon release, is used to reduce heart transplant rejection and the monitor is adapted to measure heart rate variability on a daily basis.
21. (Previously Presented) The device of claim 19, wherein the drug is one which, upon release, is effective to prevent angina or myocardial infarction or both.
22. (Previously Presented) The device of claim 19, wherein the microcontroller is adapted to release the drug as a function of the changes in the ST segment measured by the ECG monitor.
23. (Previously Presented) The device of claim 1, comprising a cardiac monitoring means for measuring electrogram signals from the heart, wherein the microcontroller is adapted to receive a signal from the cardiac monitoring means and to control the means for disintegrating one or more of the reservoir caps.
24. (Original) The device of claim 23, wherein the cardiac monitoring means is implantable.
25. (Original) The device of claim 1, further comprising a power source.

26. (Original) The device of claim 1, wherein the one or more electrodes or sensors are on an outer surface of a hermetically sealed encasement containing the drug delivery module and the microcontroller.

27. (Original) The device of claim 1, wherein the one or more electrodes or sensors extend a distance from a hermetically sealed encasement containing the drug delivery module and microcontroller.

28. (Original) The device of claim 27, wherein a flexible catheter connects the one or more electrodes to the encasement.

29. (Original) The device of claim 1, further comprising telemetry components in operable communication with the microcontroller.

30. (Original) The device of claim 1, wherein the drug delivery module comprises a microchip drug delivery device.

31-32. (Canceled).

33. (Original) The device of claim 1, further comprising one or more physiological sensors operable to deliver a signal to the microcontroller.

34. (Original) The device of claim 1, wherein the one or more electrodes or sensors monitor one or more patient parameters useful in treatment or management of congestive heart failure.

35. (Original) The device of claim 1, wherein the drug comprises a natriuretic peptide.

36-53. (Cancelled).

54. (Previously Presented) The device of claim 1, wherein the drug comprises an antiarrhythmic agent, an antianginal agent, an antithrombotic agent, or a fibrinolytic agent.

55. (Previously Presented) The device of claim 1, wherein the means for disintegrating comprises:

- an electrical input lead and an electrical output lead which are electrically connected to at least one of the reservoir caps;
- a power source; and
- a control means for controlling application of an electric current from the power source through said at least one of the reservoir caps, via the input and output leads, in an amount effective to disintegrate the reservoir cap by electrothermal ablation to release or expose the reservoir contents.

56. (Previously Presented) An implantable medical device comprising:

- a body;
- at least one reservoir in the body;
- reservoir contents contained in the at least one reservoir, wherein the reservoir contents comprises a sensor for measuring or analyzing the presence, absence, or change in a chemical or ionic species indicative of cardiac health;
- an electrically conductive reservoir cap covering the at least one reservoir to separate the reservoir contents from an environment outside of the reservoir;
- conducting leads to and from the reservoir cap; and
- a power source and a controller for selectively delivering an electric current through the reservoir cap effective to disintegrate the reservoir cap by electrothermal ablation to release or expose the reservoir contents.

57. (Previously Presented) The device of claim 56, further comprising one or more electrodes for operable engagement with a cardiac tissue of a patient, wherein the one or more electrodes are useful for cardiac monitoring, cardiac stimulation, or both.

58. (Previously Presented) The device of claim 56, which comprises a plurality of discrete reservoirs, each of which are covered by an electrically conductive reservoir cap connected to a pair of conducting leads.

59. (Previously Presented) The device of claim 56, further comprising one or more reservoirs which contain an antiarrhythmic agent, an antianginal agent, a natriuretic peptide, an antithrombotic agent, or an fibrinolytic agent, for controlled release.